C L A I M S

1. A system for transplant production comprising:

at least one air conditioner installed in a completely light shielding closed structure surrounded by a thermally insulated wall, the air conditioner controlling the temperature and humidity of air in the closed structure;

at least one box-shaped culturing module disposed in the internal space of the closed structure, the culturing module having a front face opening which is opened to the internal space of the closed structure;

a plurality of transplant production shelves arranged vertically in multi-layer in the culturing module to form a transplant production space between the upper and lower transplant production shelves;

a plurality of plug trays for holding a plant growing medium mounted on each transplant production shelf;

a sub-irrigation unit capable of irrigation from the bottom of the plug trays mounted on each transplant production shelf;

an artificial lighting unit provided on the back of each transplant production shelf, the artificial lighting unit irradiating light to the lower plug trays; and

at least one air fan fixed to the back wall of each transplant production shelf of the culturing module,

whereby the air whose temperature and humidity have been controlled by the air conditioner is sucked by the air fan from the front face opening of the culturing module and sent

to the rear of the back wall of each transplant production shelf to circulate the air in the closed structure.

2. The system for transplant production according to claim 1, wherein a plurality of the culturing modules are disposed in the internal space of the closed structure so that they are arranged in one line with their front face openings facing to the same direction.

3. The system for transplant production according to claim 1, wherein a plurality of the culturing modules are arranged in two lines with their front face openings in the same line facing to the same direction, and the front face openings in one line are opposed to the front face openings in the other line, and a work space and concurrently an air circulation path is formed between the two lines of the culturing modules.

4. The system for transplant production according to any one of claims 1 to 3, wherein the air conditioner is fixed to the upper portion of the inner face of the closed structure side wall located at the rear of the back wall of the culturing module.

5. The system for transplant production according to any one of claims 1 to 4, wherein a carbon dioxide analyzer is positioned in the inside of the closed structure and a carbon dioxide cylinder is positioned in the outside of the closed structure so as to supply a predetermined amount of carbon

dioxide into the closed structure from the carbon dioxide cylinder in accordance with an electrical signal sent from the carbon dioxide analyzer.

6. The system for transplant production according to any one of claims 1 to 5, wherein the sub-irrigation unit mounted on each transplant production shelf is provided with a shallow quadrangular box-shaped irrigation tray having three sides surrounded by side walls and having a bottom wall face, a water supply pipe for supplying water into the irrigation tray is disposed in the irrigation tray, a drainage groove joined to the bottom wall face is formed at the side of the irrigation tray having no side wall, the drainage groove and the bottom wall face are partitioned by a dam, and means for holding a gap between the bottom wall face of the irrigation tray and the bottom of the plug tray is provided on the bottom wall face of the irrigation tray to thereby hold the gap at the time of mounting the plug tray on the bottom wall face of the irrigation tray.

7. The system for transplant production according to claim 6, wherein the gap holding means is constituted by a plurality of ribs formed on the bottom wall face of the irrigation tray so as to extend from the water supply pipe to the drainage groove.

8. The system for transplant production according to claim 6, wherein the gap holding means is constituted by a plurality

of protrusions formed on the back of a perforated lower tray positioned between the bottom wall face of the irrigation tray and the plug tray at the time of mounting the plug tray on the bottom wall face of the irrigation tray.

9. The system for transplant production according to any one of claims 6 to 8, wherein at least one cutout is formed on the dam of the irrigation tray.

10. The system for transplant production according to any one of claims 6 to 9, wherein the bottom wall face of the irrigation tray gently tilts so that the drainage groove side lowers.